BIOL875
Contemporary Conservation in Australia and New Zealand
S1 Evening 2016
Dept of Biological Sciences

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## General Information

<table>
<thead>
<tr>
<th>Unit convenor and teaching staff</th>
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<tbody>
<tr>
<td>Lecturer</td>
</tr>
<tr>
<td>Rachael Dudaniec</td>
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<tr>
<td>Contact via 2 9850 8193</td>
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<tr>
<td>Associate Professor</td>
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<td>Adam Stow</td>
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<tr>
<td>Contact via 2 9850 8153</td>
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</tbody>
</table>

**Credit points**

4

**Prerequisites**

ENVS803 or GSE803 or (admission to MConsBiol or GradDipConsBiol or MMarScMgmt)

**Corequisites**

**Co-badged status**

**Unit description**

This unit provides a current review of the values, threats to existence and conservation of Australian and New Zealand wildlife. The special features, global and historical context of the Austral biota (plants, animals and other organisms) are discussed. The key threatening processes occurring worldwide are explored, along with the unique conservation problems faced at a regional level. An emphasis is placed on case studies in conservation biology with critical analysis of conservation successes and failures.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at [https://www.mq.edu.au/study/calendar-of-dates](https://www.mq.edu.au/study/calendar-of-dates)

## Learning Outcomes

On successful completion of this unit, you will be able to:

1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
2. Evaluate and interpret species recovery plans used in conservation management in
relation to the current scientific literature
3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form
4. Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media
5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken
6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery Plan Presentation</td>
<td>30%</td>
<td>Week 6, April 6</td>
</tr>
<tr>
<td>Conservation Media Report</td>
<td>30%</td>
<td>Week 9, May 11</td>
</tr>
<tr>
<td>Online Exercises</td>
<td>30%</td>
<td>Fortnightly</td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
<td>Continuous</td>
</tr>
</tbody>
</table>

Recovery Plan Presentation

Due: **Week 6, April 6**
Weighting: **30%**

Species Recovery Plan Presentation: Evaluating a species recovery plan against current research
Due: **Wednesday April 6th**
Weighting: **30%**

This Assessment Task relates to the following Learning Outcomes:

- *Evaluate and interpret species recovery plans used in conservation management in relation to the current scientific literature*
- *Communicate scientific research and issues in conservation to different target audiences in verbal and written form*
- *Identify how conservation research influences environmental management practices and assess how effectively this is undertaken*
- *Demonstrate a capacity for undertaking literature-based research into key topics in*
conservation biology and synthesising the current state-of-knowledge

There is often a long time lag between conservation research and implementing that research in conservation planning or implementation. Many species recovery plans that are currently in place were developed over a decade ago. Scientific research on the species has been done since, but does not feature in these plans. Sometimes research findings available at the time of publication are even not considered within plans.

Your task is to give a 12-minute presentation to pitch an update or expansion to the species recovery plan based on the scientific literature published since the recovery plan came into effect.

You will choose an outdated, single species recovery plan on an Australasian species that is Critically Endangered, Endangered or Vulnerable from a provided list of options. Focus on the aspects of the recovery plan that relate to the biology and management actions for the species. For example, your presentation may discuss a recent publication that found low or high population sizes in a new location/ new documented diseases/ behaviours, or other biological discovery about the species or its habitat/community. It may even involve new developments resulting from conservation actions that took place after the recovery plan was published.

You are required to:

- Choose an outdated species recovery plan from a provided list of options.
- Do a recent scientific literature search on issues relating to the plan, since it’s publication.
- Use visual aids using Powerpoint or other slide-presentation software.

Your 12-minute oral presentation should follow this structure:

1. Summarise the content of the existing recovery plan. For e.g., what are the key threats? What are the proposed actions? How well referenced is the plan? (~3 mins)
2. Describe the recent publications that you have found on the species (~3 mins). Figures and data from papers may be presented where relevant.
3. Suggest how knowledge from these recent studies might help to update, change, expand or reinforce the existing recovery plan (e.g. in methods/management actions, new things to consider) (~4 mins)
4. Receive comments and answer questions from your audience (~2 mins)

Your assessment for this task will be broken down as follows:

Component

Marks

Submission

References cited list and 1-2 line summary for each
Submit formatted list + summaries in Word .doc
Delivery and Powerpoint slides
10%
Submit slides in .pdf format
Oral presentation content
20%
In-class (or skype/pre-recorded for External Students)

Both your slides (save as .pdf) and your document containing the reference list and the 1-2 line summary of each reference must be submitted at the latest on the day you give your presentation on April 6th. Peers will provide feedback and the course convener and tutors will provide further feedback and marks.

Note External Students: Students enrolled externally are invited to attend the on-campus session on April 6th to give their presentation. If not possible, other arrangements will be made using Skype and discussion questions via iLearn.

NB: If you are inspired to do so, your findings could be outlined in a letter to the species recovery board to suggest changes to the current plan (not a part of assessment, but a possible impact from your work!).

On successful completion you will be able to:
- 2. Evaluate and interpret species recovery plans used in conservation management in relation to the current scientific literature
- 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form
- 5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken
- 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

Conservation Media Report
Due: Week 9, May 11
Weighting: 30%

2. Conservation Biology in the Media – Report (1500 words, excluding references)
Due: May 11th, Week 9
Weighting: 30%

This Assessment Task relates to the following Learning Outcomes:

- Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media
- Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

The media often reports scientific results and discoveries in mis-informed or mis-leading ways, in the interests of capturing reader attention or other motive. This occurs across many fields in science, but is also frequently the case in conservation biology. As scientists, it is important that we recognise when the media may be mis-representing other’s work, or omitting certain aspects of results to tell a ‘clear’ story. As conservation biologists we can be confronted with this, and therefore must learn to highlight discrepancies and learn to better communicate our work to the public, the media, managers and policy makers. This task is designed to raise your awareness of these issues and ability to recognise and evaluate them by directly verifying media articles that report on conservation research through consultation of both scientific and non-scientific literature.

In a 1500-word report in your own words, you will choose three recent (< 5 years old) media articles that each focus on a particular published study within conservation biology. Each media article assessment is worth 10% (x3 media articles = 30%).

Each media article must be on a separate conservation topic, with a different journal article(s) associated with it. The chosen media articles should focus on conservation topics within or relevant to Australasia (defined as: Australia, New Zealand, New Guinea, and the South Pacific Islands).

Key requirements and guidelines:

- Write a maximum of 500 words on each article (total of 1500 words), evaluating the content of the media article against the journal article it describes, which must be cited.
- Media articles are to be sourced from specific sources as suggested below.
- To be independent, media articles and journal articles cannot come from the same publisher (e.g. Nature Publishing Group).
- Where statements are made in the media article without reference to the published article, you may consult the wider literature to support the media’s content.
- Reports must contain citations and a reference list of both peer-reviewed scientific literature and the media articles you focus on.
- Write your report for a scientifically literate audience.
Specific questions you must address **for each of the three media articles** in your report are:

- What is the conservation issue outlined in the media article? Why is it significant and attracting media attention? Give a brief background using a broader literature search.
- What impression does the media article give us *alone* about the research conducted? Summarise the article as if you have no prior knowledge but the article topic at hand.
- Read and compare the original published journal article to the media article—Is any of the information (e.g., numbers/statistics/conclusions) in the media article mis-quoted from the journal article? Are major caveats of the study ignored or key results omitted?
- Obviously scientific methods cannot be described in detail within a media article, but is excluding the methods creating a false image of what was performed, or is it adequately represented?
- Conclusion: Overall synthesis, suggested improvements to media article and impressions

Please do not rewrite these questions/points in your report. Please only **address each of them**, preferably in the order above as you write your report.

On successful completion you will be able to:

- 1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- 2. Evaluate and interpret species recovery plans used in conservation management in relation to the current scientific literature
- 4. Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media
- 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

**Online Exercises**

Due: **Fortnightly**

Weighting: **30%**

**3. Online Exercises**

Due: **Approximately every two weeks**

Weighting: **30% (5 exercises, 6% per exercise)**

This Assessment Task relates to the following Learning Outcomes:

- *Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad*
Communicate scientific research and issues in conservation to different target audiences in verbal and written form

Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesizing the current state-of-knowledge

Following every second lecture (i.e. every two weeks, excluding break), you are required to complete an online exercise that will be made available on iLearn that you will have two weeks to complete (see timetable). The online exercises will consist of short answers, quizzes and other exercises that explore the content of the previous two lectures, and in alignment with the Austral Ark text book chapters. The exercises may involve consulting external websites, the peer-reviewed literature and the textbook Austral Ark.

The schedule for the availability and due dates of each online exercise is as follows. Note: fortnightly exercises become available on Mondays and are due the week after on Fridays. Exercises open at 9am on the date available and close at 11.59pm on the due date.

### Online exercise

<table>
<thead>
<tr>
<th>Date Available on iLearn</th>
<th>Due Date</th>
</tr>
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<tbody>
<tr>
<td>-Closed on iLearn</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>14 March</td>
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<tr>
<td>2</td>
<td>25 March</td>
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<td>2</td>
<td>28 March</td>
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<td>3</td>
<td>8 April</td>
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<td>4</td>
<td>2 May</td>
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<td>5</td>
<td>13 May</td>
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<td>6</td>
<td>16 May</td>
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<tr>
<td>7</td>
<td>27 May</td>
</tr>
<tr>
<td>8</td>
<td>30 May</td>
</tr>
<tr>
<td>9</td>
<td>June 10</td>
</tr>
</tbody>
</table>
On successful completion you will be able to:

- 1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form
- 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

**Participation**

**Due:** Continuous  
**Weighting:** 10%

**Participation in online forums and tutorial discussions.**

**Due:** Continuous  
**Weighting:** 10%

This Assessment Task relates to the following Learning Outcomes:

1. *Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad*
2. *Communicate scientific research and issues in conservation to different target audiences in verbal and written form*
3. *Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge*

Discussions will be instigated weekly via the online forums or within face-to-face tutorial sessions (following lectures) that are centered around the peer-reviewed conservation biology literature or current conservation issues. Discussions may involve debating a particular issue in conservation biology, or expand on topics discussed in tutorials and lectures. There will also be tutorial discussions and exercises relating to the lecture material on research methods in conservation biology in some tutorial sessions. This may involve reading scientific literature to inform online or in-class discussions. Students are expected to participate regularly in these discussions, for example, by posing questions, offering answers, responding to other’s posts, or sharing relevant information resources. Students are expected to participate in tutorial discussions and exercises either in person during scheduled sessions and on iLearn, or for external students, exclusively via iLearn.

Assessment criteria for participation is based on two components, (1) your contribution to posting questions, answers or comments on conservation topics that will be initiated on iLearn forums throughout the duration of the course, and (2) your involvement in general course discussions about course content and logistics, demonstrating course engagement and interaction with peers. Component (2) may be evidenced during face-to-face contact hours or online (i.e. online discussions and exercises, or iLearn discussions).
only for external students).

A breakdown of the marking scheme for participation is available on iLearn.

On successful completion you will be able to:

1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
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6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

**Delivery and Resources**

Weekly lectures and tutorials will be held Wednesdays 6.00-8.00pm in room EMCG240. Attendance at lectures is highly encouraged to enable face-to-face discussions with the invited speakers and to enhance class participation.

Students will need access to a computer and basic office software (eg. Microsoft Office or OpenOffice) to complete assessment tasks. Some computers will be available in EMCG240. An Internet browser will also be required to search for background information, for assignments and to complete online exercises and enable online course participation. Some tutorials may require a computer, which may be provided if needed. Course content and discussion boards etc. will be available through iLearn.

The set, **compulsory** text required for this unit is:


The text book is available for purchase on campus at the Co-op bookstore.

**Unit Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture (6-7pm)</th>
<th>Practical/Discussion (7-8 pm)</th>
<th>Date</th>
<th>Book chapters</th>
<th>Assessment due</th>
<th>Online exercises 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course overview &amp; intro to conservation in Australia</td>
<td>Extended lecture and course overview</td>
<td>March 2</td>
<td>1,3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Topic</td>
<td>Discussion and Q&amp;A session for major assessment tasks</td>
<td>Date</td>
<td></td>
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<tr>
<td>2</td>
<td>Impacts of climate change on flora and fauna</td>
<td>Discussion and Q&amp;A session for major assessment tasks</td>
<td>March 9</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Biosecurity and animal invasions</td>
<td>Species distribution modeling practical with Maxent</td>
<td>March 16</td>
<td>5,8,10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Groundwater life and its conservation</td>
<td>Groundwater biodiversity tutorial</td>
<td>March 23</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Biological invasions of plants</td>
<td>Plant invasion tutorial</td>
<td>March 30</td>
<td>6,7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>No lecture: Species Recovery Plan Presentations. External students ON CAMPUS SESSION*</td>
<td>Presentations</td>
<td>April 6</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Amphibian Conservation and biogeography</td>
<td>The role of phylogeography in conservation</td>
<td>April 27</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Marine and Terrestrial protected areas</td>
<td>Reserve design tutorial using Marxan</td>
<td>May 4</td>
<td>26,27,28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Terrestrial mammal diversity, conservation and management</td>
<td>Landscape genetics in conservation</td>
<td>May 11</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Fire and biodiversity</td>
<td>Fire management in Australia</td>
<td>May 18</td>
<td>25</td>
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</table>
### Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](http://mq.edu.au/policy/docs/). Students should be aware of the following policies in particular with regard to Learning and Teaching:


In addition, a number of other policies can be found in the [Learning and Teaching Category](http://mq.edu.au/policy/docs/). Additionally, the [Student Code of Conduct](https://students.mq.edu.au/support/student_conduct/)

### Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student_conduct/](https://students.mq.edu.au/support/student_conduct/)

### Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in *eStudent*. For more information visit [ask.mq.edu.au](http://ask.mq.edu.au).

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<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Dates</th>
<th>Exercise</th>
<th>Due</th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>Marine mammals – contemporary conservation issues</td>
<td>Shark conservation and management</td>
<td>May 25</td>
<td>4: Due May 27</td>
</tr>
<tr>
<td>12</td>
<td>Innovative conservation for Australian birds</td>
<td>Avian databases/ species management</td>
<td>June 1</td>
<td>5: Available May 30</td>
</tr>
<tr>
<td>13</td>
<td>Conservation and management of Australian reptiles</td>
<td>Final discussion and wrap-up</td>
<td>June 8</td>
<td>5: Due Jun10</td>
</tr>
</tbody>
</table>
Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University’s IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form
- 5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken
Assessment tasks

- Conservation Media Report
- Online Exercises
- Participation

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- 1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- 2. Evaluate and interpret species recovery plans used in conservation management in relation to the current scientific literature
- 4. Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media
- 5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken
- 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

Assessment task

- Online Exercises

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- 1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- 2. Evaluate and interpret species recovery plans used in conservation management in
relation to the current scientific literature

• 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form

• 4. Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media

• 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

**Assessment tasks**

• Recovery Plan Presentation
• Conservation Media Report
• Online Exercises

**PG - Research and Problem Solving Capability**

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

**Learning outcomes**

• 2. Evaluate and interpret species recovery plans used in conservation management in relation to the current scientific literature

• 4. Evaluate literature on conservation issues within peer-reviewed scientific articles and their representation within the written media

• 5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken

• 6. Demonstrate a capacity for undertaking literature-based research into key topics in conservation biology and synthesising the current state-of-knowledge

**Assessment tasks**

• Recovery Plan Presentation
• Conservation Media Report

**PG - Effective Communication**

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.
This graduate capability is supported by:

**Learning outcomes**

- 1. Describe theoretical concepts in conservation biology and current conservation issues in Australia and abroad
- 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form

**Assessment tasks**

- Recovery Plan Presentation
- Online Exercises
- Participation

**PG - Engaged and Responsible, Active and Ethical Citizens**

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

**Learning outcomes**

- 3. Communicate scientific research and issues in conservation to different target audiences in verbal and written form
- 5. Identify how conservation research influences environmental management practices and assess how effectively this is undertaken

**Assessment tasks**

- Conservation Media Report
- Online Exercises
- Participation